

Diet and prey size spectrum of lingcod (*Ophiodon elongatus*), a top predator in rocky reefs of the San Juan Archipelago

Anne Beaudreau*, *University of Washington*

Keywords: predation, marine protected areas, lingcod, rockfish, San Juan Archipelago

Despite extensive efforts to protect rockfishes (*Sebastes spp.*) through marine reserves and other fishing restrictions in the San Juan Islands, many of the resident species continue to decline in overall abundance. In contrast, lingcod (*Ophiodon elongatus*), a top predator that demonstrated similarly large population declines, responded strongly to these same conservation measures. The broader goal of this study is to investigate the hypothesis that localized lingcod populations may recover more rapidly than co-occurring rockfish species, and thereby inhibit rockfish recovery through predation. As a first step, I am investigating ontogenetic and seasonal shifts in lingcod diets in the San Juan Channel. More than 250 lingcod were collected by angling and stomach contents removed through gastric lavage during the spring, summer, and winter of 2004-2005. Lingcod demonstrated ontogenetic shifts in prey selectivity, characterized by a switch from predominately sand lance while small, to a more varied diet including larger bodied prey such as rockfish, gadids, and clupeids as they grew larger. Future research will involve continued investigation of lingcod diets, collection of abundance data for lingcod and rockfishes, and lingcod gastric evacuation rate experiments in the laboratory. These data will be incorporated into development of age/size-structured population models of lingcod and rockfish that are coupled through trophic linkages.